

CHAPTER VI: PIPE AND PILE LAUNCHES

A. General Description

Pipe and pile structure, which are used independently as launches or in combination with other structures, can span marshes or shallow areas to enable launching in water of sufficient depth. In some cases, “approach pads” or walkway structures are designed to enable access to the launch itself. Structures are composed of a deck and frame, which stand above water level at all times, and are supported by pipes or piles. While piles can be used in any depth of water, pipes rest on supports (e.g., concrete pads) and are not suitable for deep water.

B. Materials

- Decking is frequently made of wood, concrete, or alternative wood materials
- Piles are usually made of treated timber, steel pipes, or concrete
- Pipes with diameters between 1½" and 3" are preferable

Environmental Impact from Pile Installation

Pile design and construction can potentially have negative environmental impacts, as well as health ramifications for those involved in their construction. Piling methods should be researched and prepared for thoroughly before construction. The U.S. Forest Service's *Wetland Design and Construction* is a resource that discusses pile installations in more depth (*see Bibliography*).

While there is limited research available on the environmental impacts of piling, some methods clearly cause less disruption to sediments and vegetation than others. The process of “driving,” for example, is significantly less disruptive than “jetting,” which uses high-pressure hoses. Disturbances to sediments in sandy areas can be greatly reduced when low-pressure pumps are used to create an initial hole and sharpened piles are installed with a drop hammer.

C. Design specifications/variations

- Water level should be lower than the level of the deck at all times
- Pipe legs need cross bracing and bracketing to the frames for reinforcement

D. Advantages

- Effective in areas of strong current
- Pipes are environmentally-friendly
- Stable surface for launching
- Good choice for providing access to paddlers with disabilities; handrails or step-downs may be easily added
- Usually requires little alteration to shoreline
- Relatively inexpensive to construct
- Structures are easily visible from rivers
- Pipe docks can be easily adjusted or removed

E. Disadvantages

- Does not accommodate extreme variations in water level
- Construction of piles can have damaging environmental impacts, such as altering currents, if they disrupt flows or sediments
- Piles made of treated wood can contaminate water (*see notes below*)

Environmental impacts from wood preservatives

According to some studies, the greatest likelihood of water contamination from launch construction occurs from preservatives that are applied to pilings or floats in locations that come into regular contact with water. Many states have banned the use of oil-based preservatives containing creosote (CRT) or pentachlorophenol (PCP) in aquatic areas due to their demonstrated toxic effects from leaching, since soluble components separate and leak into the water.

The most common material used in pressure-treating wood used for pilings and decking is chromated copper arsenate (CCA), which is usually made of 47.5% hexavalent chromic oxide, 18.5% cupric oxide, and 34% arsenic pentoxide. It has been proven that CCA will leach in salt water and can be toxic to estuarine species. However, nearly all of the leaching occurs within the first 90 days of submersion.

Studies show that the level of CCA's toxicity depends on its chemical form when it reaches an organism. Its chemical form will change over time and with different sediment types, amounts of organic material present, oxygen levels, and water movement. However, given that most leaching occurs when the launch is new and that the area surrounding the launch is relatively small, it is likely that tidal movement will prevent high levels of CCA from accumulating.

Further details may be found in report by NOAA Coastal Ocean Program Decision Analysis Series No. 22 (*see Bibliography*)